IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANT(s):	Lainema et al	CONF.NO.:	5610
SERIAL NO.:	10/762,736	ART UNIT:	2612
FILING DATE:	January 21, 2004	EXAMINER:	Allen C. Wong
TITLE:	METHOD OF GIVING THE USER INFORMATION, PORTABLE DEVICE, AND COMPUTER PROGRAM PRODUCT		
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APPELLANTS BRIEF

(37 C.F.R. §1.192)

This is an appeal from the final rejection of the claims in the subject application. A Notice of Appeal was filed on February 24, 2010. This is in response to the Notice of Panel Decision From Pre-Appeal Brief Review mailed May 4, 2010.

[1] Real Party In Interest

The real party in interest in this Appeal is the assignee, Nokia Corporation, Espoo, Finland.

[2] Related Appeal And Interferences

There are no related appeals or interferences.

[3] Status Of The Claims

Claims 33-41 stand rejected under 35USC103(a) on the basis of the combined teaching of Nieweglowski, WO97/16025, in view Yagasaki, U.S. Patent No. 5,428,396. The rejections are contained in the office action mailed November 23, 2009. Claims 33-41 are presented for consideration in this Appeal and are contained in the attached Claim Appendix.

[4] Status Of Amendments

No amendments were filed after Final Rejection.

[5] Summary Of The Claimed Subject Matter

In the following descriptions reference is made to the page and line numbers of the original application.

The method of independent claim 33 is described most particularly beginning on pages 16, line 9 and extending through page 18, line 7 with reference to figure 5. According to the method, in step 501, a prediction error quantizer is determined from encoded video information in steps 502-505. The prediction error quantizer is used to quantize prediction error transform coefficients in steps 506-507. The accuracy of motion coefficients are determined based on the prediction error quantizer in steps 507 and 508, wherein the motion coefficients represent the motion of a picture segment. The encoded video information is then decoded into an image based on the prediction error quantizer and the accuracy of the motion coefficients in steps 511 and 512.

The decoder of claim 35 is described at page 20, lines 23-34 and on page 21, lines 4-15 with reference to figured 7-9. A demultiplexing unit 23 is configured to determine a prediction error quantizer from the encoded video information, the prediction error quantizer is used to quantize the prediction error transform coefficients. A motion field coding block 21 is configured to determine accuracy of the motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment.

The computer-readable storage medium of claim 37 is described with respect to the function of the decoder on page 20, lines 23-34, with reference to figures 5 and 8. In this embodiment a prediction error quantizer is determined from decoded encoded video information and is used to quantize the transform coefficients of step 510. The accuracy of the motion coefficients are determined based on the prediction error quantizer, wherein the motion coefficients represent the motion of a picture segment.

The apparatus of independent claim 39 is described on page 21, lines 4-15, with reference to figure 9 (see also page 19, lines 26-34 and page 20, lines 6-17. In this embodiment an inverse quantization unit 40 is configured to determine a prediction error quantizer from motion coefficients of the encoded video information, the prediction error quantizer 40 serving to quantize prediction error transform coefficients. A further quantization unit 42 determines an accuracy of the motion coefficients based on the prediction error quantizer, wherein the motion coefficients represent the motion of a picture segment.

[6] Grounds for Rejection to be reviewed on Appeal

A. Applicant requests that the grounds for rejection of claims 33-41 under 35 USC 103(a), based on the combined teaching of the references Niewegloski and Yagasaki be reviewed.

[7] Argument

A. The combined teaching of Nieweglowski, does not render claims 33-41 obvious because it fails to teach or otherwise suggest each and every limitation of the claims. In a prima facie case for obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Although the case of *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S., 82 USPQ2d 1385 (2007), clarified the framework for the rejection of claims based on obviousness under 35 USC §103(a), a further operative question is "whether the improvement is more than the predictable use of prior art elements according to their established functions." (82 USPQ2d at 1396. (from MPEP 2141). There must also be some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. (MPEP 2141, III(G)). In this case, it is submitted that the "predictable use" of the prior art elements does not lead to Applicant''s claimed subject matter. First because the elements of the combined teaching are different and second because elements of Nieweglowski and Yagasaki are not directly combinable to obtained the claim invention.

With respect to the rejections of all of the claims under 35 U.S.C. 103, it is urged that any attempted combination of the teachings of Nieweglowski and Yagasaki would provide one with a determining of a prediction error quantizer from the encoded video (Nieweglowski), **<u>and</u>** a determining of an accuracy of motion coefficients (Yagasaki). In contrast, claim 33 recites "determining an accuracy of motion coefficients **<u>based</u>** on the prediction error quantizer". This represents a significant departure from the claimed subject matter because the combined

teachings would not lead one to employ the prediction error quantizer for determining the accuracy of the motion coefficients.

The examiner acknowledges (see 11/23/09 Action, top of page 14) that Nieweglowski does not disclose determining an accuracy of motion coefficients, and states that Yagasaki discloses the determination of the range of accuracy values of the motion coefficients. Based on this the examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements. However, as noted above, such combination of the two references would not lead to the claimed subject matter.

These observations also apply to the rejections of other ones of the claims. For example, in rejecting Claim 34, the examiner asserts that "Nieweglowski discloses receiving information indicating a motion coefficient quantizer". This was not found upon a reading of Nieweglowski. There is no mentioning of "accuracy" or "quantizer" or "quantization" in Nieweglowski. In response to this, Examiner states "The concept of quanitization is considered to be inherent in the art of MPEG" or if not then it is "extremely obvious". These statements are unsupported, but in addition are totally generic and not specific to the claimed subject matter. Applicant does not claim quantization in a general sense, but only in the context of the claimed subject matter, namely, "the prediction error quantizer used to quantize prediction error transform coefficients".

In the rejection of claim 33, the examiner relies on Nieweglowski to show a method for decoding encoded video information with a determining of a prediction error quantizer fro the encoded video information, and wherein the prediction error quantizer is used to quantize prediction error transform coefficients. The examiner states that element 22 (Fig. 2) determines the prediction error quantizer from the encoded video information, and states further that element 3 (Fig. 1) is the motion field coding section that produces the motion coefficients, that element 21 (Fig. 2) obtains the motion coefficient data of the picture segment data, and that Fig. 5 discloses a motion field coder with quantization (page 8 at line 14 to page 9 at line 9).

A review of the text of Nieweglowski reveals no discussion of quantization. The terms quantize and quantization are not found in Nieweglowski. In contrast, this language is found in numerous locations in the present specification. For example, on page 17 (lines 12 -15) of the present specification, there is a teaching that the receiver determines the motion information quantizer

with reference to a quantizer used to encode the prediction error information. Quantization of a motion coefficient is explained on page 14 with reference to equation 9, wherein q is a quantization parameter defining an interval between reconstruction points. With respect to the prediction error coding block 14 (Fig. 1, and page 3 at lines 4-11), the specification teaches the use of the discrete cosine transform (DCT), for which transform coefficients are quantized. As is well known, some components of the transform may have near-zero values, so the dropping of such terms in a quantization procedure results in little error. Transform coefficients of the prediction error, which are transmitted (lines 17-18) are used in an error decoding block 22. The specification teaches (page 21 at lines 34-38, Fig. 10) that the motion coefficient removal block 63 determines which coefficients can be set to zero without excessive reduction in accuracy. The following paragraph discusses the use of the two-dimensional DCT.

Of particular significance (specification, page 22, beginning at line 10) is the selection of a suitable quantizer, and the statement (lines 26-28) that the size of the quantization interval used to quantize the motion coefficients is related to the quantization interval used in the quantization of the prediction error coefficients. This enables higher accuracy (based on prediction error) to be automatically transmitted with the motion information (first line on page 23). Transmission of this quantization information is discussed also on page 19 (lines 20-25) and depicted in Fig 9. This also serves as a basis for support of the statement in claim 33 which teaches: determining an accuracy of motion coefficients based on the prediction error quantizer. The words "based on" express the teaching of Fig. 9 represented by the line connecting the error decoding block 22 to the quantizer selection block 42 in the motion compensated prediction block 21'.

In contrast, with Nieweglowski, there is no drawing figure in Nieweglowski nor any textual passage in Nieweglowski relating to the foregoing function of communicating quantizer information from the error decoding block to the quantizer selection block.

Also, since Nieweglowski does not provide a discussion of quantization, it is not clear what in Nieweglowski would suggest to the examiner a teaching of quantization, unless the examiner believes it is inherent in the operations of the Nieweglowski equipment. For example, in Nieweglowski on page 3 at lines 4-21, there is a mathematical description of motion coefficients, and that it is advantageous to minimize the number of motion coefficients that are sent to a decoder. Description is provided with the aid of equations (3) which involve summations of terms having motion coefficients. Possibly the examiner regards elimination of some of these terms as quantization. It would be useful if the examiner would explain where in Nieweglowski

there is the teaching of quantization. A general unsupported statement that quantization is inherent or extremely obvious fails to support the conclusion that Nieweglowski teaches the specific elements of the claimed subject. The above remarks to not constitute an attack on a reference individually, but only on the contribution of the reference to the combined teaching as asserted by the Examiner. Because the reference Nieweglowski is deficient, the combined teaching fails to teach all of the elements of the claims as indicated above.

The examiner on page 14 of the Action cites Yagasaki to teach the determination of the accuracy of the motion coefficients (col. 13 at lines 24-36, and col. 3 at lines 54-61). The passage in col. 3 at lines 54-61 teaches that it is desirable to provide for motion vector coding with varying degrees of accuracy. In col. 13 at lines 15-24. the signals S54 and S55 are referred to as flags for forward motion and backward motion vectors, and are disclosed in Figs. 4B and 7. The passage in col. 13 at lines 24-36 discusses, with respect to the motion vector circuit 16 of Fig. 7, that the signals S54 and S55 represent a degree of accuracy of the motion vector. These signals are mentioned previously, with reference to Fig. 4, in col. 6 at line 56, where they are said to be provided to a motion compensator 22. They are shown as exiting a memory 30 in Fig. 4B and being applied to the motion vector circuit 16 (Fig. 4B) and to a motion predictor 12 in Fig. 4A. It is possible to select one of the signals by a switch shown in Fig. 7 that is operated in response to a motion compensation signal S14.

Present claim 33 recites: determining an accuracy of the motion coefficients based on the prediction error quantizer. The examiner ignores the limitation of "based on", a matter emphasized in the client instructions. However, in the foregoing discussion of locations in Yagasaki which discuss the matter of accuracy with respect to the signals S54 and S55, there is no teaching of a relationship between the accuracy of the motion coefficients and the operation of a prediction error quantizer. Also, in the extensive discussion of columns 9-10 in conjunction with Fig. 11, there is provided a variable length coding table relating to motion vectors, but there is no discussion of a process of quantization of motion vectors or error quantization in conjunction with a relationship with accuracy.

It is noted that the examiner has continued to rely on Yagasaki for teaching accuracy based on prediction error quantization (see prior actions such as the action of March 14, 2007 on page 12, and the Action of November 2, 2007 on page 3). In view of the foregoing analysis of Yagasaki, it is urged that there can be no teaching in Yagasaki, in the matter of motion

coefficients, of accuracy based on prediction error quantization, as is called for by present claim 33.

It is urged that, in view of the failure of Nieweglowski to disclose what quantization is actually employed, and the failure to provide a teaching of communicating the quantization to the motion compensated prediction of a receiver of the video image, Nieweglowski cannot serve as a basis for rejection of the claims. Similarly, as noted above, Yagasaki fails to disclose the aspect of accuracy. Thus, there could be no motivation to combine the two references, and any attempt at their combination would not teach or suggest the aforementioned important features of the claimed subject matter. Yagasaki fails to remedy the deficiencies of Neiweglowski. The predictable use of the prior elements of the combined teaching, such as they are, do not lead to Applicant's claimed subject matter.

The foregoing argument, while directed specifically to the rejection of claim 33, applies also to the rejections of other ones of the claims, wherein the cited art is interpreted and applied similarly to the rejections of claim 33 as independent claims 35, 37, and 39 have limitations equivalent to claim 33. The above arguments apply equally to the rejected dependent claims as, based on their dependency, they contain all of the limitations of the independent claims.

[8] SUMMARY

It is respectfully submitted that all of the claims, as presented, are clearly novel and patentable over the prior art of record. Accordingly, the Board of Appeals is respectfully requested to favorably consider the rejected claims and to reverse the final rejections, thereby enabling this application to issue as a U.S. Letters Patent.

Respectfully submitted,

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CLAIM APPENDIX

33. A method for decoding encoded video information, the method comprising:

determining, via a decoder, a prediction error quantizer from encoded video information, the prediction error quantizer used to quantize prediction error transform coefficients; and wherein the decoder further provides the functions of:

determining an accuracy of motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment; and

decoding encoded video information into an image based on the prediction error quantizer and the accuracy of the motion coefficients.

34. The method for decoding encoded video information according to claim 33, further comprising:

receiving information indicating a motion coefficient quantizer for determining the accuracy of the motion coefficients.

35. A decoder for decoding encoded video information, the decoder comprising:

a demultiplexing unit for determining a prediction error quantizer from the encoded video information, the prediction error quantizer used to quantize the prediction error transform coefficients; and

a motion field coding block for determining an accuracy of the motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment.

36. The decoder for decoding encoded video information according to claim 35, wherein the demultiplexing unit is further configured to:

determine signalling information indicating a motion coefficient quantizer for selecting the accuracy of the motion coefficients from the encoded video information.

37. A computer-readable storage medium containing a computer program which, upon execution by a computer, directs the computer to perform the method of:

decoding encoded video information;

determining a prediction error quantizer from the encoded video information, the prediction error quantizer used to quantize the prediction error transform coefficients; and

determining an accuracy of the motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment.

38. A computer-readable storage medium containing a computer program which, upon execution by a computer, directs the computer to perform the method according to claim 37, wherein the method further comprises:

receiving information indicating a motion coefficient quantizer for determining the accuracy of the motion coefficients.

39. An apparatus comprising a decoder for decoding encoded video information, wherein the decoder comprises:

an inverse quantization unit for determining a prediction error quantizer from motion coefficients of the encoded video information, the prediction error quantizer serving to quantize prediction error transform coefficients; and

a further quantization unit for determining an accuracy of the motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment.

40. An apparatus according to claim 39 further comprising a connection from the decoder to the further quantization unit for communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients.

41. A method according to claim 33 wherein, in the determining of the accuracy of the motion coefficients, there is a communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients.

EVIDENCE APPENDIX

(Not Applicable)

RELATED PROCEEDINGS APPENDIX

(NONE)